AUX POWER

Take it Anywhere, Use it Everywhere!!

WAVE Length
Systems & Solutions

USER'S MANUAL

- INSTALLATION
- MAINTENANCE
- SERVICE

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SAFETY PRECAUTIONS / MAINTENANCE

SAFETY PRECAUTIONS

In this manual, symbols are used to highlight warnings and cautions for you to read so that accidents can be prevented. The meanings of these symbols are as follows.

WARNING This symbol indicates explanations about extremely dangerous matters. If users ignore this symbol and handle the device the wrong way, serious injury could result.

CAUTION This symbol indicates explanations about dangerous matters. If users ignore this symbol and handle the device the wrong way, bodily injury and damage to the equipment could result.

Please observe the following safety tips and precautions to ensure hazard-free use of AUX-POWER.

Power requirements

CAUTION

Since the power consumption of this unit is fairly high when maximum output current is drawn, we recommend to use the proper 1Ph.AC source with enough power as indicated in the rating plate of the unit.

Always use the standard sockets, lugs, clips, input and output cables supplied with the unit. Avoid joints as far as possible.

Environment

WARNING

To prevent the risk of fire electric shock or malfunctioning, avoid using AUXPOWER in environments where it will exposed to.

- Extreme temperatures
- Heat sources such as radiators or stoves
- Very high humidity or high moisture
- Excessive dust or sand
- Excessive vibration or shock

Handling

WARNING

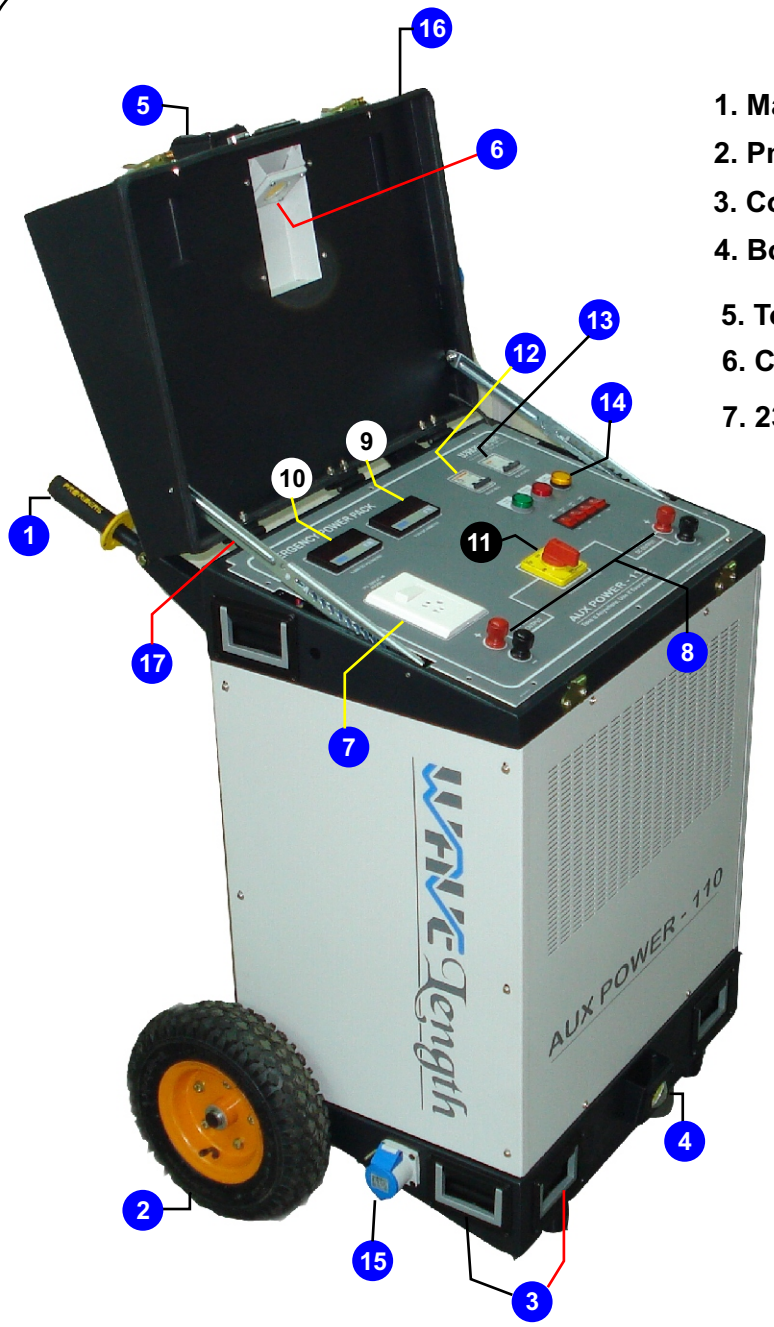
- The unit shall be handled by authorised persons having enough knowledge of DC circuits.
- Before connecting the AUXPOWER to any other DC circuits extreme care to be taken about the output voltage and the polarity of both the systems.
- Never attempt to parallel two AUXPOWER of different output voltages or more then five units at a time. Always be sure about the polarity of the units at both the ends.
- Never attempt to charge bulk battery systems of the sub stations or any other external batteries with the AUXPOWER which will cause permanent damage to the internal batteries of the unit.
- Do not by pass the fuses and any protection system of the equipment like MCB, switch etc. of the unit, since this can cause severe damage to the user and the unit.
- Always wear safety goggles, gloves, and use proper tools while handling the equipment.

MAINTENANCE

CAUTION

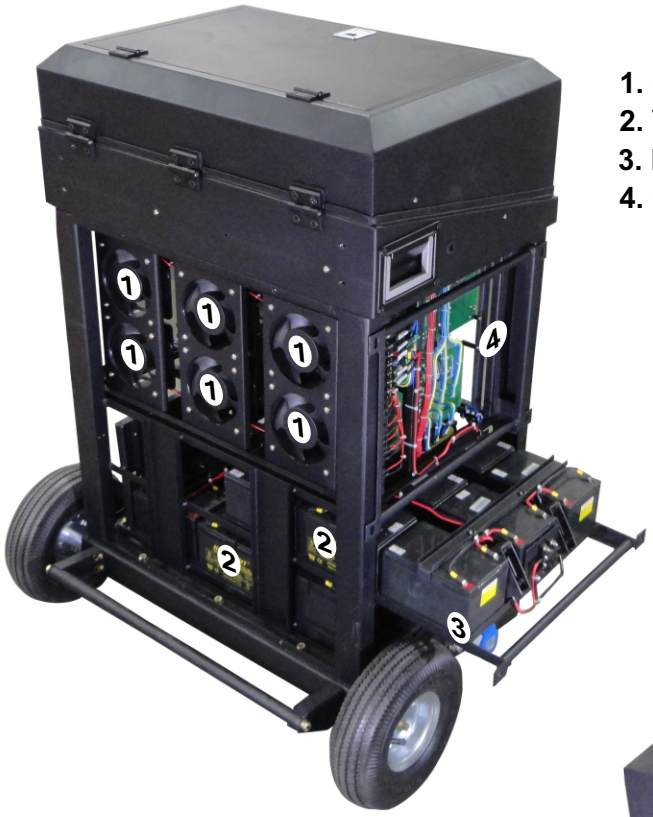
- AUXPOWER is built with the set of VRLA batteries and they does not need regular maintenance. As the expected life of the VRLA batteries is about 4 to 5 years.
- Regularly charge the system once in a day or two for 2 to 3 hours even when not in use. Never forget to charge the system for 10 to 12 hours after every use.
- Periodically check the air pressure of both pneumatic tires and maintain the pressure of 30 PSI for the best performance.
- Clean the system with the dry soft cloth daily. Do not use abrasive cleaner, wax or solvents (such as paint thinner, or cleaning alcohol) since, they may dull the finish or damage the surface.

ANATOMY OF THE AUXPOWER



1. Main Handle With Rubber Grips
2. Pneumatic Tyres
3. Concealed Handles
4. Bottom Illuminating LED Lamp
5. Top Illuminating LED Lamp
6. Cubicle Illuminating LED Lamp
7. 230V 5A AC Output Socket
8. DC output Terminals
9. 0-25A DC Ammeter
10. 0-300V DC Voltmeter
11. 32A DC Output Switch
12. 25A 2 Pole 250V DC MCB
13. 63A 2 Pole 415V AC MCB
14. Input AC On,
    Output DC On,
    Under Voltage Alarm,
    Indicating Lamps
15. 16A AC Input Socket
16. Top Cover
17. Variable Door Stay

ANATOMY OF THE AUXPOWER Cont...



1. Cooling Fans
2. VRLA Batteries
3. Draw out type Battery Rack
4. Charger PCB Rack

5. Charger PCB
6. Output Terminals
7. Battery Fuses

PRODUCT OVERVIEW

AUX POWER Provides safe DC power in the yard or remote location during an emergency, testing and maintenance of power and protection equipments of the sub stations.

They are portable, quite, safe and re-chargeble DC sources of power available in any standard voltages.

SALIENT FEATURES

- Maintenance free.
- Easy to operate.
- Tough and compact.
- Totally weather protected.
- Long shelf life.
- Fast recharge.
- Leak proof.
- Lightweight and portable.

INTERNAL PROTECTION SYSTEMS

Active Protection

- Current Limiter & Inrush Limiter on all Charger Modules.
- Thermal Overload, Short Circuit Protection for Charger Modules.
- Overcharge Protection & Battery Low Voltage Detector.

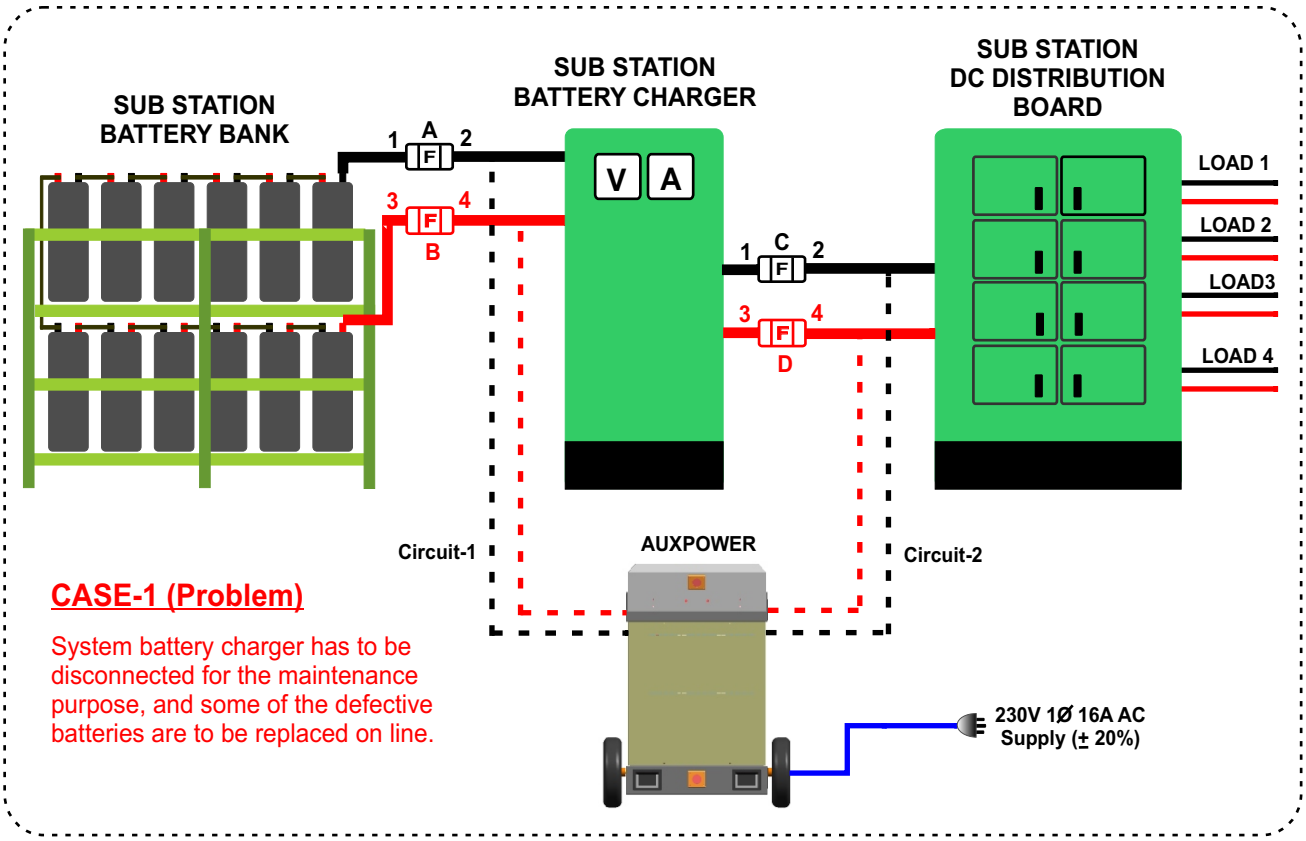
Passive Protection

- 63A Input AC MCB. 25A Output DC MCB.
- 32A DC Fuses for all Battery Banks.
- 600V, 40A Reverse Polarity Protection Diode.

PRODUCT APPLICATIONS

The AUXPOWER can be generally used as an emergency stored DC source at power plants, substations and laboratories for testing of protective relays, circuit breakers and other electrical and electronic equipments.

Apart from the above use, AUXPOWER can also be used typically in some of the emergency cases as shown below. It is requested the user to study the below cases and make the proper use of the unit.



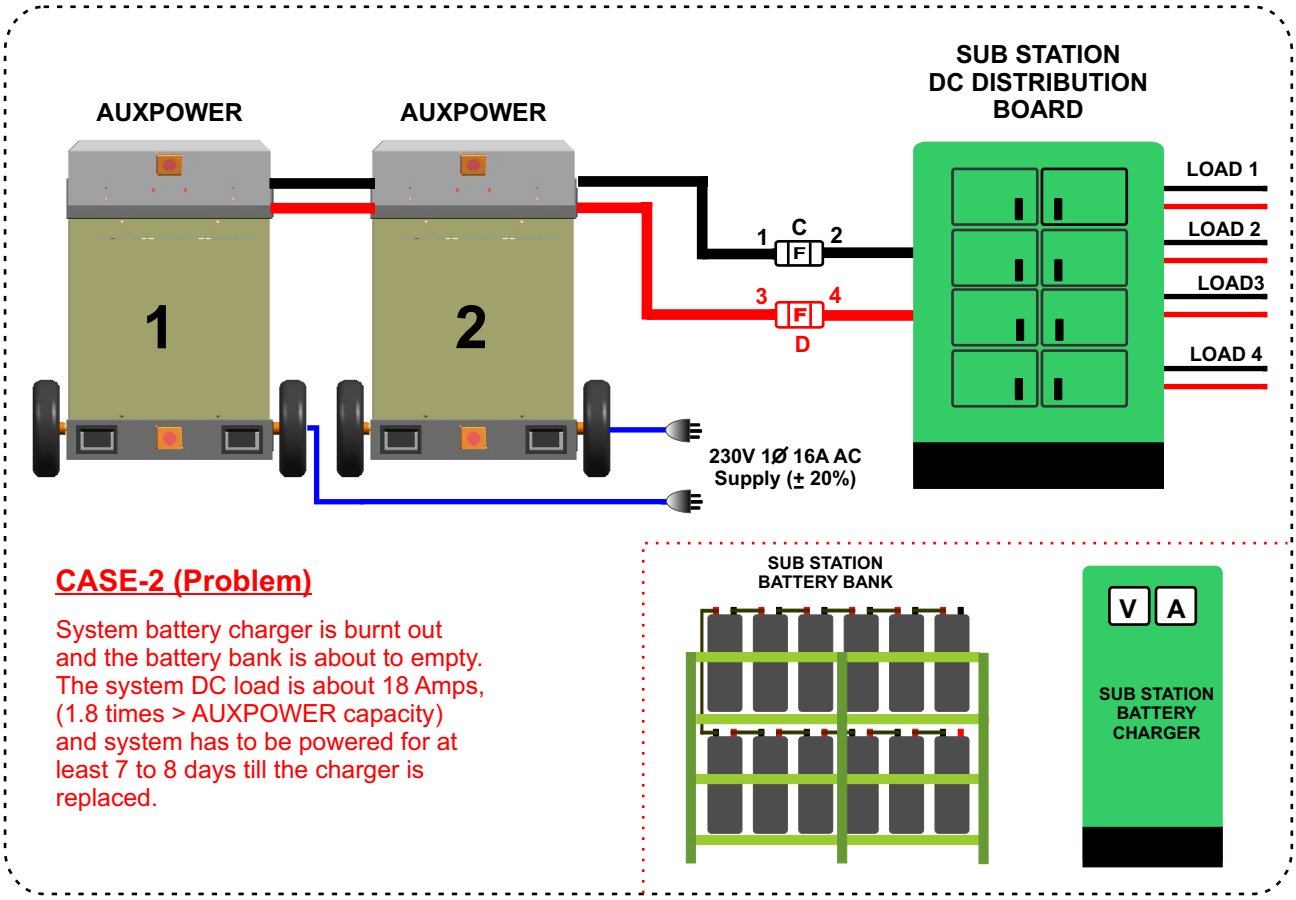
CASE-1 (Problem)

System battery charger has to be disconnected for the maintenance purpose, and some of the defective batteries are to be replaced on line.

CASE-1 (Solution)

1. Connect the AUXPOWER to the AC Input.
2. DC Output cables shall be connected to the terminal 2 & 4 of the output fuses A &B as shown in the circuit 1.
3. Switch on the DC Output switch of the AUX POWER and disconnect the faulty battery circuit as soon as possible.
4. Now the AUXPOWER will keep on supplying the DC power to the whole system continuously (if the system current is < 10A DC) till you finish the replacement of the batteries.
5. To isolate both the battery and the charger, DC Output cables shall be connected to the terminal 2 & 4 of the output fuses C & D as shown in the circuit 2. and remove the C & D fuses immediately. Now the whole DC circuit is disconnected from the faulty system without interruption.

PRODUCT APPLICATIONS Contd..



CASE-2 (Problem)

System battery charger is burnt out and the battery bank is about to empty. The system DC load is about 18 Amps, (1.8 times > AUXPOWER capacity) and system has to be powered for at least 7 to 8 days till the charger is replaced.

CASE-2 (Solution)

1. Connect 2 or 3 AUXPOWER to get the output of 18 Amps or more.
   (With the unique current share design of the system, 2 to 3 AUXPOWER units can be paralleled to get more output.)

2. DC Output cables shall be connected to the terminal 1 & 3 of the output fuses C & D as shown in the circuit.

3. Switch on the DC Output switches of both the AUXPOWER and disconnect the faulty battery and the battery charger as soon as possible.

4. Now both the AUXPOWER will keep on supplying the DC power to the whole system continuously even if the system load current is 18A DC.

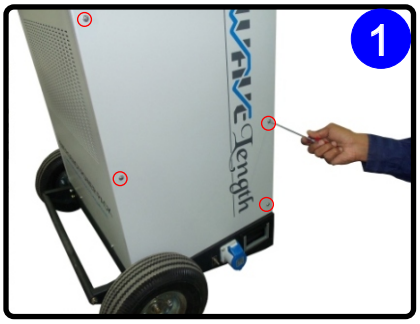
5. The AUXPOWER can be used as a substitute to the substation battery bank and the charger for any number of days if the AC input is made available continuously to the unit.
   If AC is not available, a fully charged unit can supply 10 Amps current for maximum of 45 minutes to 1Hour.

6. Even though the AUXPOWER is designed for continuous10A DC output rating, it can withstand the surge currents up to 30 to 40 Amps for more than 30 seconds.

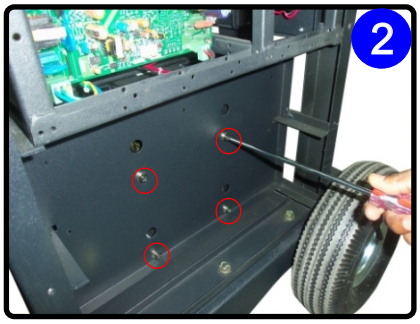
7. The system is equipped with low battery indicating alarm at 85% of the rated voltage during the operation on battery.

REPLACEMENT OF BATTERIES & TYRES

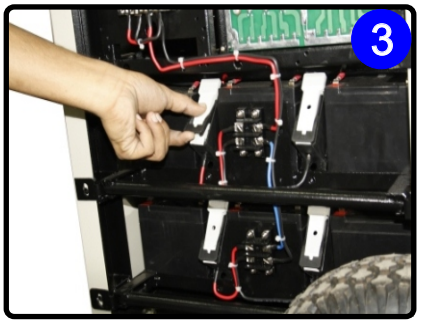
Draw out design of the system allows the user to replace the batteries in 7 easy steps



Open both the side covers by removing the screws

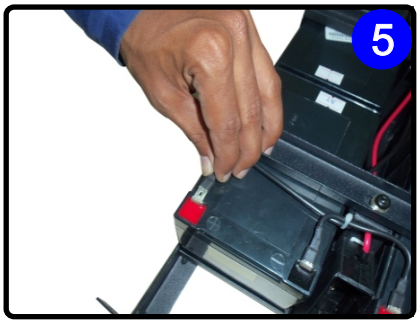


Un-screw the screws of the battery racks

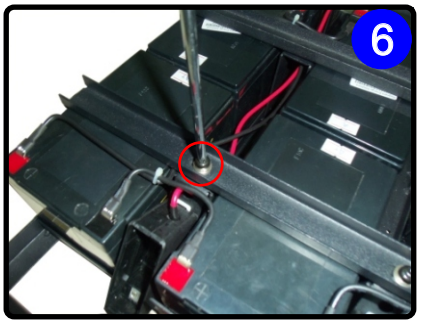


Open the fuses of the battery & disconnect wires from the terminal

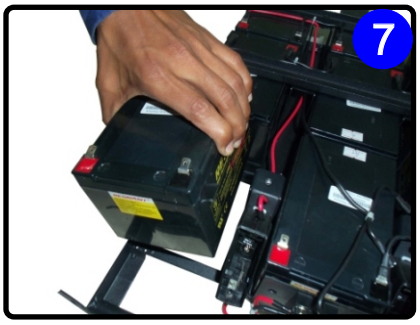
Draw out the battery rack



Pullout the wiring of the battery

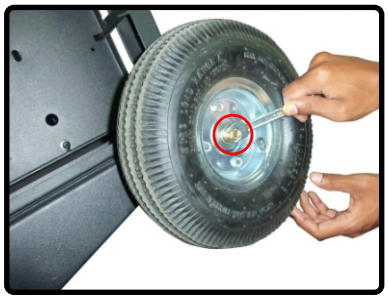


Remove the screws of the battery holder



Replace the battery

Replacing of pneumatic wheels

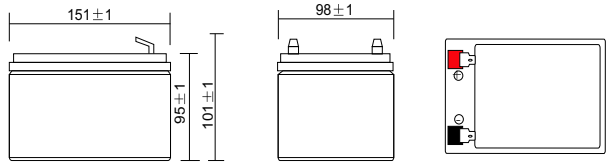


Remove the bolt

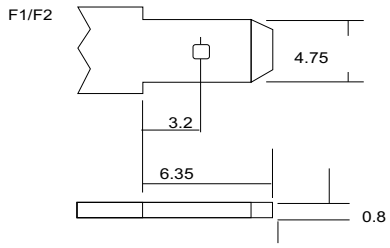
Pullout the wheel from the shaft

SMF BATTERY CHARACTERISTICS

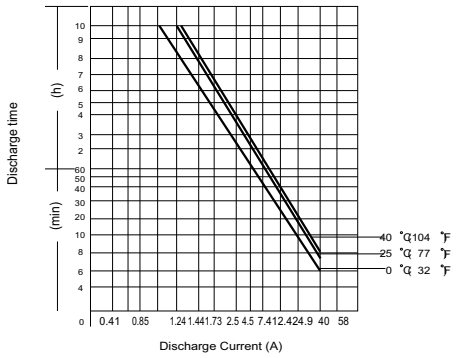
Dimensions (mm)



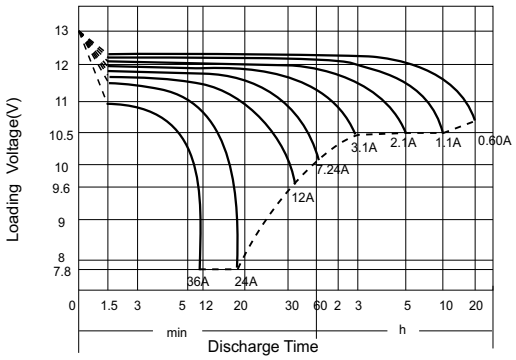
Standard Terminal (mm)



Discharging Current & Discharge Duration Time



Discharge Characteristics (25ºC ,77ºC)



Electrical Specification

Rated Capacity	20 hour rate (0.60A) 10 hour rate (1.11A) 5 hour rate (2.1A) 1 hour rate (7.07A)	12.0AH 11.1AH 10.5AH 7.24AH	Constant-Voltage Charge	Cycle	Initial Charging Current less than 3.6A.Voltage 14.4V~ 15.0V at 25C (77F) Temp. Coefficient-30mV/C
Capacity affected by Temperature	40℃ (104℉) 25℃ (77℉) 0℃ (32℉)	103% 100% 86%		Standby	No limit on Initial Charging Current Voltage 13.5V~13.8V at 25℃(77℉) Temp. Coefficient - 20mV/C

Physical Specification 12V 12Ah. 20Hr Rating

Dimension	Length X Width X Container Height Total Height (with Terminal) Weight	151 X 98 X 95 ±1mm 101 ±1mm Approx 3.85kg
Standard Terminal		F1/F2

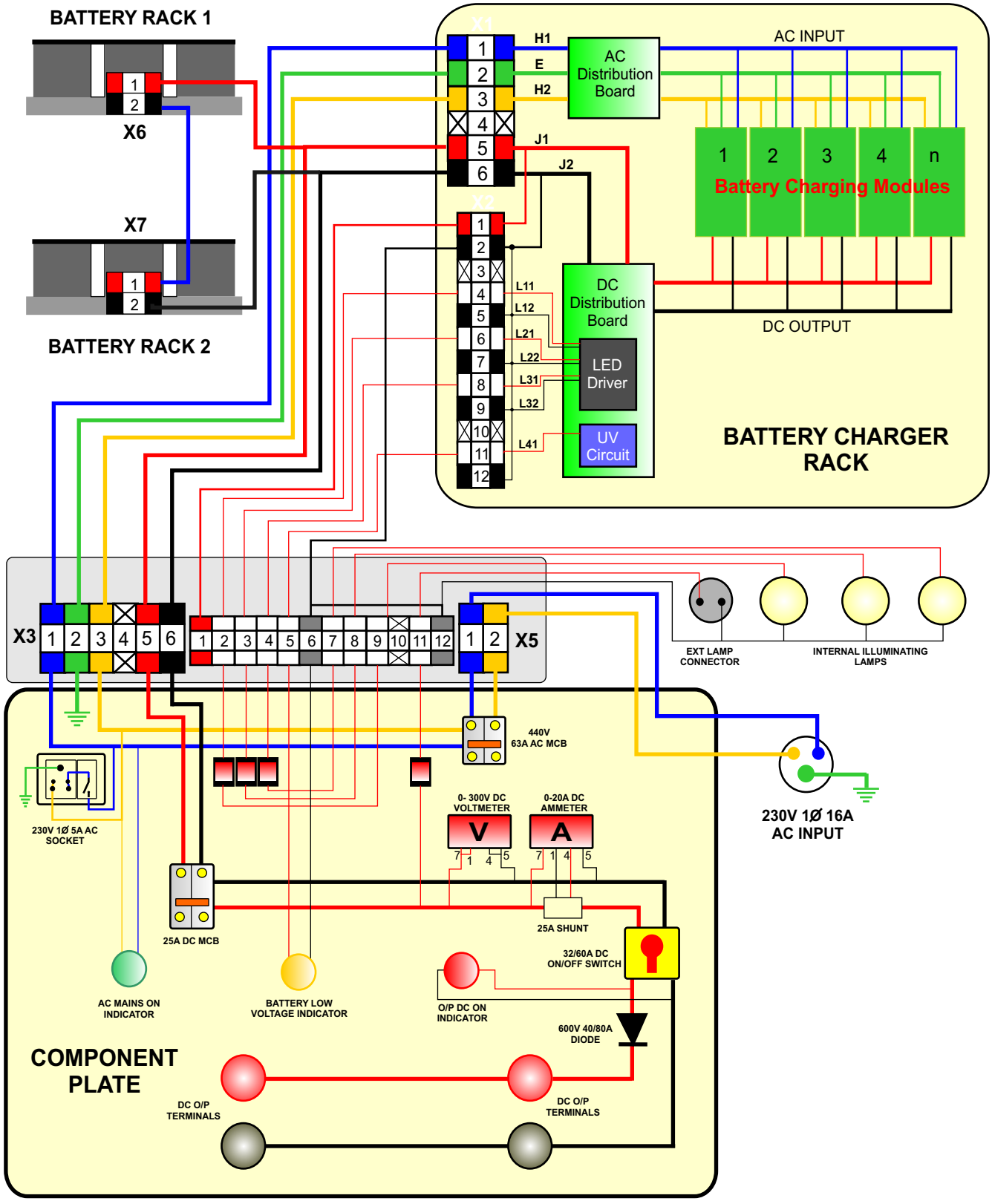
Constant Current Discharge Characteristics Unit: Amperes (25ºC, 77ºF)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	46.3	31.5	23.3	13.8	7.81	4.46	3.38	2.71	2.22	1.45	1.21	0.629
1.67V	39.9	28.1	21.1	12.8	7.44	4.27	3.22	2.58	2.11	1.43	1.18	0.623
1.70V	38.1	26.9	20.5	12.4	7.29	4.20	3.15	2.54	2.09	1.42	1.17	0.617
1.75V	34.6	24.6	19.2	11.9	7.07	4.04	3.06	2.48	2.06	1.40	1.16	0.606
1.80V	30.7	22.4	17.6	11.5	6.76	3.90	3.00	2.42	1.99	1.37	1.15	0.600
1.85V	22.9	17.5	14.5	9.72	6.03	3.57	2.79	2.27	1.85	1.30	1.08	0.594

Constant Power Discharge Characteristics Unit: Watts (25ºC, 77ºF)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	460.7	320.9	244.5	150.9	88.1	50.8	38.7	31.3	25.7	17.04	14.22	7.43
1.67V	409.6	294.6	226.5	141.6	84.7	48.9	37.1	29.9	24.6	16.80	13.96	7.37
1.70V	393.3	282.9	220.3	137.6	83.3	48.3	36.4	29.5	24.4	16.69	13.83	7.31
1.75V	367.4	265.5	209.3	133.0	81.0	46.6	35.4	28.8	24.1	16.47	13.71	7.18
1.80V	332.9	245.6	194.0	129.1	77.8	45.1	34.9	28.3	23.3	16.23	13.59	7.12
					70.1	41.6	32.6	26.6	21.8	15.35	12.85	7.06

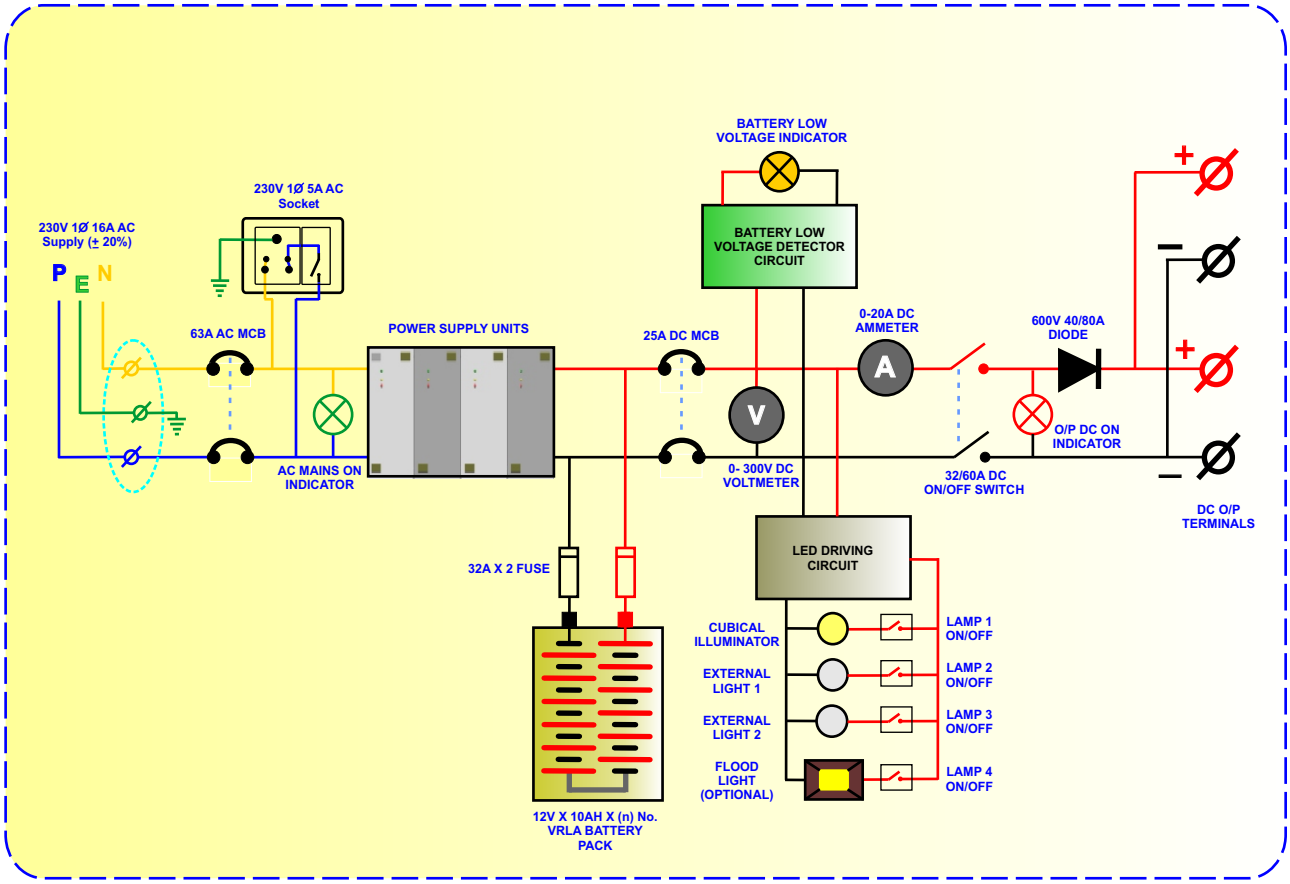
INTERNAL WIRING DIAGRAM



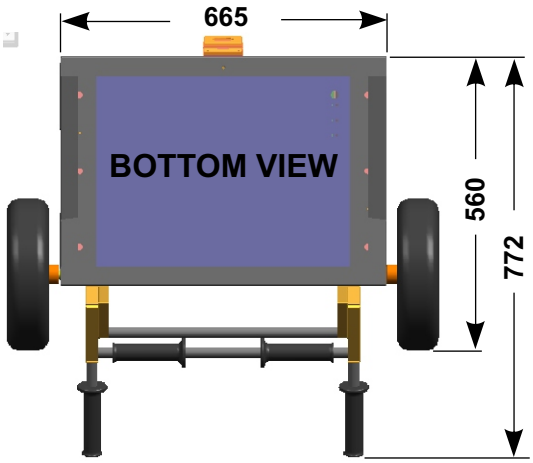
TECHNICAL SPECIFICATIONS

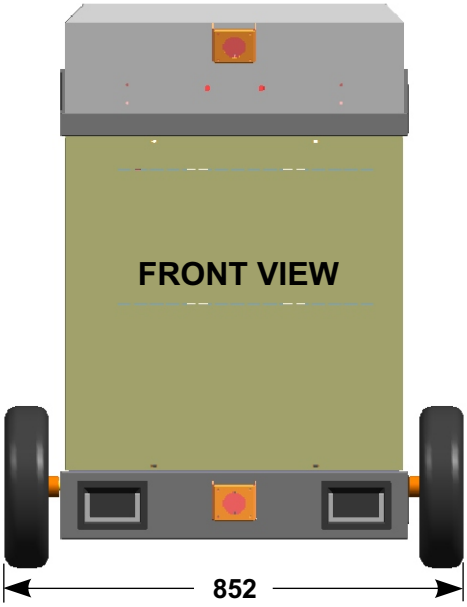
PRODUCT	INPUT VOLTAGE (+/- 15 %)	OUTPUT VOLTAGE (+/- 15 %)	MAXIMUM OUTPUT CURRENT	BATTERY TYPE	TOTAL No. Of BATTERIES (12V, 10A X n)	METERING		PROTECTION		UNIT WEIGHT (Approximate)
						V 3 Digit (Digital)	A 3 Digit (Digital)	INPUT	OUTPUT	
AUX POWER 220	1Ph. 230V 50Hz (+/- 5Hz) AC SUPPLY	220V DC	10A / 1Hour	VRLA (Maintenance Free)	18	0-300V DC	0-20A DC	63A 415V AC MCB	25A 250V DC MCB 32A DC FUSE	160Kg.
AUX POWER 110		110V DC	10A / 1Hour		9	0-300V DC	0-20A DC		25A 250V DC MCB 32A DC FUSE	110Kg.
AUX POWER 110A		110V DC	20A / 1Hour		18	0-300V DC	0-40A DC		63A 250V DC MCB 64A DC FUSE	160Kg.
AUX POWER 48		48V DC	20A / 1Hour		8	0-150V DC	0-40A DC		63A 100V DC MCB 64A DC FUSE	110Kg.
AUX POWER 48A		48V DC	40A / 1Hour		16	0-150V DC	0-80A DC		63A 100V DC MCB 64A DC FUSE	160Kg.

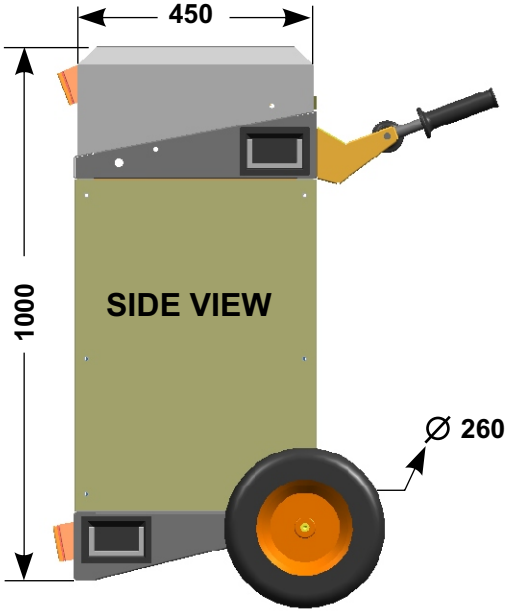
GENERAL SCHEMATIC



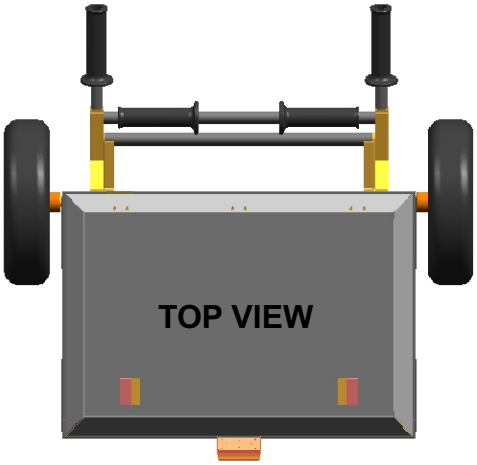
DIMENSIONAL DETAILS







*All Dimensions are in mm



*Any design and the dimensions of the products are subject to change without prior intimation.

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CONTACT US :-

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